Helisoma (?) *kettlemanensis,* n. sp. Minute, resembling *H. anceps* (Mke.) in general form except that it is not carinate; left side more deeply and narrowly umbilicate than the right, periphery rounded; aperture large, oblique and triangular-lunate. Diam. 2.8 mm., alt. 1.7 mm.; nearly 3 whorls.

NEW LYMNAEIDAE FROM THE UNITED STATES AND CANADA: I. CALIFORNIA, OREGON AND OTHER WESTERN STATES

BY FRANK C. BAKER

When the writer's "Lymnaeidae of North and Middle America" was published in 1911 it was thought that the limit had been reached in the number of species of this family in North America. The more conservative critics of this work believed that too many species had been admitted as recognizable, and that in time some of these would become synonyms. Such, however, has not been the case, for during the twenty-two years which have passed since its publication nearly a dozen new species and races have been added. Studies on material recently received from Canada and the western United States indicate quite clearly that a considerable number must still be added. It is proposed to diagnose these new forms in a series of papers of which this is the first.

That indefatigable worker and keen observer Professor Junius Henderson has been overhauling the Hemphill and Hannibal collections of fresh-water mollusks in the museum of the Leland Stanford University, and has unearthed a number of Lymnaeas which do not fit into any of the species known at present, and it becomes necessary to affix new names to them.

Stagnicola palustris magister nov. var. Vol. 47, pl. 14, fig. 1.

Shell differing from *S. p. nuttalliana* in being larger, with a longer spire, deeper sutures, the penultimate whorl large and "puffy," the aperture rounder and more or less arched at the posterior angle. There are fully seven whorls. *Nuttalliana* usually has only six full whorls.

Length	Diam.	Aperture length	Width	
38.5	17.0	17.7	9.1 mm.	Holotype.
39.5	19.5	21.0	10.1 mm.	Paratype.
33.0	16.5	17.0	8.8 mm.	"
32.0	15.0	15.8	8.1 mm.	"

Type locality: East Shore Rhett (Tule) Lake, Modoc Co., California, collected by Henry Hemphill. Types: Stanford University, Geological Department, No. 5773.

This is the largest form of the *palustris* group observed in America. It is abundant in Tule Lake and apparently does not occur elsewhere. Its size and general shape are uniform enough to constitute a form or race of *palustris,* a variant evidently from the *nuttalliana* form. Immature and young specimens, 10–13 mm. long and having 4–5 whorls, are in the Hannibal collection. They are like the immature condition of the *palustris* varieties found throughout America.

Stagnicola palustris buttoni nov. var. Vol. 47, pl. 14, fig. 4.

Shell elongated, narrow; whorls 6–7, flat-sided, elongated; suture impressed; spire somewhat scalariform, usually 1⅓ times length of aperture; body whorl flattened; aperture elongated, almost twice as high as wide; outer lip thin, with faint varix within; inner lip narrow, reflected over columellar region leaving distinct umbilical chink; parietal wall with white callus; color light yellowish horn, surface dull to shining; sculpture coarse, often raised into well marked costae; surface often malleated; columellar plait not well developed.

Length	Diam.	Aperture length	Width	
25.5	10.0	10.5	4.9 mm.	Holotype.
25.6	10.8	11.0	5.4 mm.	Paratype.
21.5	8.8	9.0	5.0 mm.	"
28.6	12.0	14.5	7.0 mm.	"

Type locality: Near Salt Lake City, Utah, collected by Henry Hemphill. *Types:* Stanford University, Geological Department, No. 5774.

This form or race is related to *S. p. wyomingensis* F. C. Baker, differing in its longer spire with higher whorls which are flat-sided, not rounded. The body whorl is very flat-sided, the aperture long and narrow, there is a distinct umbilical chink, and the

sculpture is coarser than in *wyomingensis*. This form was found in the Hemphill collection labeled "*Galba proxima buttoni* Baker" and it is evident that the writer gave specimens this name when the Lymnaeidae monograph was in preparation. It was evidently forgotten in the final draft of the work. It is a characteristic and easily distinguished variety of the prolific *palustris* group.

Stagnicola hemphilli sp. nov. Vol. 47, pl. 14, fig. 7.

Shell ovate, light horn color, shining; whorls 6, flatly rounded, sutures well marked; spire short, acute, pyramidal; body whorl wide, convex; aperture long ovate, narrowed above, rounded below, about as long as the spire; outer lip well rounded, with a red varix near the edge within the aperture; inner lip rather wide, erect, emargining the well marked umbilicus; columellar plait not distinct, often absent; a more or less distinct callus on the parietal wall; the spiral sculpture of impressed lines is distinct and there may be raised vertical costae or the shell may be malleated.

Length	Diam.	Aperture length	Width	
18.0	9.1	9.1	4.8 mm.	Holotype.
20.2	10.2	10.3	5.1 mm.	Paratype.
20.3	10.0	10.6	5.0 mm.	"
16.2	8.0	8.2	4.2 mm.	"

Type locality: Near Salt Lake City, Utah Co., Utah, Hemphill collection. *Types:* Stanford University, Geological Department, No. 5775.

This neat species somewhat resembles short forms of *Stagnicola traskii* (Tryon). It differs markedly in its more spindle-shaped form, the spire and aperture being equal in length, the aperture not rounded but elongate-ovate, the body whorl is not obese, the spire whorls are not elongated, and the inner lip is wider and in most specimens emargines the umbilicus. The color is different, a darker horn sometimes purplish. The species belongs in the series of forms erroneously placed under *traskii* in the Lymnaeidae Monograph, p. 368, and appears to be the same as the specimens figured on pl. 39, figs. 7, 8, from Black Rock Butte, Sweetwater Co., Wyo. (coll. Walker, 13506). The specimens from Alberta represent another species which will be diagnosed in another paper.

Stagnicola impedita nov. sp. Vol. 47, pl. 14, fig. 3.

Shell much elongated, narrow, of 6–6½ loosely coiled, flat-sided whorls; spire very acute; sutures deeply indented; body whorl flattened, elongated; aperture less than half the length of shell, elongate-ovate; outer lip without marked varical thickening; inner lip narrow, appressed at its junction with parietal wall forming a slight plait; umbilical chink small; surface shining, sculpture of fine growth lines crossed by fine spiral impressed lines; there is a wash of callus on the parietal wall.

Length	Diam.	Aperture length	Width	
16.5	6.1	6.3	3.0 mm.	Holotype.
16.0	6.1	6.2	3.0 mm.	Paratype.
15.7	6.0	7.9	3.2 mm.	"
13.2	5.2	6.0	2.5 mm.	"

Type locality: Near Logan, Cache Co., Utah, Hemphill collection. *Types:* Stanford University, Geological Department, No. 5776.

This small lymnaeid bears the most striking resemblance to *Stagnicola kirtlandiana* (Lea), and was so labelled in the Hemphill collection. It differs from Lea's species in being smaller, the whorls are not as long, not as rounded, sutures less deeply impressed, body whorl wider, aperture more ovate, columellar plait less marked, and sculpture much finer. The two species appear to be almost parallel in development although inhabiting widely separated areas.

THE POLYGYRA TRIDENTATA COMPLEX

BY A. F. ARCHER

Outside of the section *Stenotrema* few groups of *Polygyra* give more trouble in identification than the *Polygyra tridentata* complex. This complex belongs in the section *Triodopsis*. An examination of material that from time to time has come into the collection of the Museum of Comparative Zoology, Cambridge, Massachusetts, shows that there has been uncertainty and confusion in the determination of the species contained in this group. This is due both to the difficulty of naming, and to the uncertain application of names that existed in the latter half